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# STATE OF NEW MEXICO BEFORE THE SECRETARY OF THE ENVIRONMENT

IN THE MATTER OF HEARING DETERMINATION REQUEST FOR THE WASTE ISOLATION PILOT PLANT (WIPP) DISCHARGE PERMIT RENEWAL AND MODIFICATION APPLICATION FOR DP-831

No. GWQB 21-19(P)

#### HEARING OFFICER'S REPORT AND RECOMMENDED DECISION

## I. INTRODUCTION

The Waste Isolation Pilot Plant ("WIPP"), located in Eddy County, New Mexico, is a facility authorized by Congress for the disposal of transuranic ("TRU") radioactive waste materials generated by atomic energy defense activities of the United States. Radioactive and hazardous waste ("mixed waste") generated across the United States at Department of Energy ("DOE", "Applicant" or "Permittee") facilities is transported to WIPP for disposal. Mixed waste is radioactive waste that is also a hazardous waste as defined by the Hazardous Waste Act, NMSA 1978, §§ 74-1-14 to -14 (1977, as amended through 2018), and is thus subject to regulation by the Department under the Hazardous Waste Act. In addition, WIPP is required to hold a groundwater discharge permit from the Department, pursuant to the Water Quality Act ("WQA") NMSA 1978 §§ 74-6-1 to -17 (1967, as amended through 2021), and the New Mexico Ground and Surface Water Protection Regulations ("Regulations"), 20.6.2 NMAC.

The original WIPP groundwater Discharge Permit ("**DP-831**") underlying this proceeding was issued by the Ground Water Quality Bureau ("**GWQB**" or "**Bureau**") on January 16, 1992. It was amended on August 28, 1995, renewed on July 3, 1997, amended on June 12, 1998, and January 24, 2000, renewed on April 29, 2003, modified on December 22, 2003, and December 29, 2006, renewed and modified on July 23, 2008, and last renewed on July 29, 2014. The application

for renewal and modification of DP-831 consists of the materials submitted by DOE dated December 3, 2018, and materials contained in the Administrative Record prior to issuance of this Draft Permit in the present proceeding.

The Draft Permit at issue here, addresses the renewal and modification of associated permit conditions, consisting of the addition of one new salt storage cell and four new liquid impoundments: Salt Cell 5, Salt Storage Pond 5, Brine Salt Storage Pond 4, Brine Retention Pond East, and Brine Retention Pond West. DOE proposes to renew and modify DP-831 for the discharge of up to 9,586,995 gallons per day of industrial wastewater and stormwater to an impoundment and disposal system and up to 23,000 gallons per day of domestic wastewater to a treatment and disposal system.

The New Mexico Environment Department Ground Water Quality Bureau processed DOE's application in accordance with the Regulations and, on or about September 20, 2020, issued the Draft Permit which is the subject of this hearing.

Certain interested parties requested a hearing on the Draft Permit, which was conducted via online video conference beginning on September 7, 2021. Prior to the hearing, the GWQB, DOE, and the Requesting Parties entered into a Stipulation and Agreement, which the Hearing Officer made a part of the Record of this proceeding by an Order dated August 24, 2021. This Stipulation and Agreement reflected the Parties' agreement and limited the scope of the hearing. The Stipulation and Agreement established that the regulatory requirements had been met with respect to all but one of the permit conditions. The remaining permit condition (number 33) was addressed during the Hearing to the satisfaction of DOE, GWQB, and the Requesting Parties. The Bureau, therefore recommends that the Secretary approve the renewal and modification of DP-831 as proposed herein.

The Public Hearing was held virtually via the Zoom platform from September 7-8, 2021, conducted by Gregory Ara Chakalian, Office of Public Facilitation's Administrative Law Judge, and the duly appointed Hearing Officer. The Hearing was conducted in accordance with 20.1.4 NMAC, NMED's Permitting rule, recorded by Zoom and transcribed verbatim by Christine Roybal of Albuquerque Court Reporting Service, LLC. Each day the hearing began at 12:00 p.m. and ended at 9:00 p.m. with a two-hour break for dinner. Spanish language interpreters were sworn in at the outset and provided live instruction, before the hearing began each day in English and Spanish, on how to use the simultaneous interpretation Zoom feature, and how to participate via general comment and cross-examination of witnesses.

Non-technical (general) comment was received at predetermined times, and various other times throughout the hearing, through a virtual sign-in sheet moderated by the Zoom Administrator. General comment was sworn but not restricted to relevancy under 20.1.4.400 NMAC, and the public was provided an email to send in unlimited written comment. Everyone who signed up was provided an opportunity to voice their support or opposition to the renewal and modification of DP-831.

The Governor's Emergency Order and a New Mexico Department of Health Public

Health Order were in effect during the entirety of the Hearing. The following Parties submitted

Notices of Intent to Present Technical Testimony ("NOI"):

The Bureau appeared through Counsel of Record Christopher J. Vigil and Christal Weatherly, Assistants General Counsel, 121 Tijeras Ave. NE, Suite 1000, Albuquerque, New Mexico 87102. The Bureau presented the prefiled full written and oral testimony of Steve Pullen, Section Manager of the Pollution Prevention Section of the Ground Water Quality Bureau

("GWQB"), and Avery Young, Environmental Scientist and Specialist-Advanced, of the Pollution Prevention Section of the GWQB.

The U.S Department of Energy appeared through Counsel of Record, Myles Hall and Tom Angel, U.S. Department of Energy, 4021 National Parks Highway, Carlsbad, NM 88220. Called as witnesses for DOE were Robert F. Kehrman, Technical Consultant to the Manager of Regulatory Environmental Services ("RES"), an affiliate of Nuclear Waste Partnership, LLC., Richard Salness, Manager of Environmental Monitoring and Hydrology for RES, and Joshua Vajda, advisory engineer for RES.

Interested Party Southwest Research and Information Center ("SRIC") presented the testimony of its representative Don Hancock. SRIC filed a timely NOI, however, a timely objection was made after Mr. Hancock's opening statement that raised the legal issue of his qualifications as a technical expert as defined under 20.1.4.7 NMAC [September 7, 2021, Transcript. p.177, line 4]. After argument from both Parties, the objection was sustained, and Mr. Hancock was provided with an extended opportunity (30-minutes) to provide non-technical comment. SRIC's NOI, while not admitted into evidence, was considered as an offer of proof and part of the Hearing Record as defined by 20.1.4.7.A.14 NMAC.

Likewise, interested Party Concerned Citizens for Nuclear Safety ("CCNS") presented the testimony of Joni Arends, Co-founder, and Executive Director. CCNS submitted a timely NOI, however an objection was raised after her opening statement, to her qualifications as a technical expert [September 7, 2021, Transcript. p.202, line 21]. After hearing argument from both Parties, the objection was sustained, and Ms. Arends was provided with an extended time (30-minutes) to provide non-technical comment. Note: a second objection was raised that Ms.

Arends had an ethical duty to her client (CCNS) preventing her from testifying, but as the first objection was sustained, the second was not ruled upon.

The Record proper includes, *inter alia*, the application for the permit renewal and modification request ("Application"), the Public Hearing Determination Request endorsed by the Secretary of Environment on March 23, 2021, a Notice of Docketing and Appointment of Hearing Officer, a Scheduling Order, an Order Granting the Bureau's Motion to Waive the 60-day Deadline to Distribute Notice of Public Hearing, a Scheduling Order filed June 4, 2021, two Motions in Limine and the corresponding Orders Granting In-Part (discussed in detail below), notices of public hearing in English and Spanish, the Administrative Record submitted by the Bureau with supplementation, notices of filing and affidavits of publication, the Verbatim Transcript, written public comment and other documents and exhibits submitted at the hearing, the Notice of transcript Filing, post-hearing submittals from the Parties, and this Report and Recommended Decision.

An independent summary of the testimony is not set out here; DOE, Bureau, SRIC, and CCNS/Reade submitted good summaries of the testimony as part of their proposed findings of fact and conclusions of law. After an analysis of the Hearing Record, the undersigned Hearing Officer adopts the true facts below.

#### **Motions in Limine and the Rulings**

DOE's Motion in Limine requested relief in the form of an order under 20.6.2.3110(E), 20.1.4.100(E)(2), and 20.1.4.200(D) NMAC prohibiting all parties from presenting evidence on three topics. After a full briefing, an order granting in-part was entered on July 8, 2021, concluding that the issue of future expansion of the WIPP facility not relied upon in the Application, and not incorporated into the Draft Permit were deemed irrelevant. It was also

decided that the public hearing was not the appropriate forum to litigate DOE's NEPA compliance. On the other hand, it was decided that quality-of-life evidence was relevant to the Draft Permit under *Rhino*.

The Bureau's Motion in Limine requested relief in the form of an order which was granted in-part after a full briefing. Based on relevancy and reliability as outlined in 20.1.4.400 NMAC, the Order excluded evidence on the issues of "future expansion" and grievances regarding the Public Involvement Plan.

## Issues at the Public Hearing as Limited by Stipulation

Evidence was submitted by the Parties on the following main issues during the public hearing:

- A. The proposed modification to incorporate Salt Cell 5 and Salt Pond 5. The written and oral testimony of DOE's witnesses established, by a preponderance of the evidence, the proposed modification to incorporate Salt Cell 5 and Salt Pond 5.

  Their testimony, and the testimony of the GWQB's expert witnesses, further established that the requirements of the Ground and Surface Water Protection Regulations were met for that modification.
- B. The Requesting Parties proposed the added permit condition of a Ground Water Permit Information Repository. There was no written or oral technical testimony presented to support the imposition of a new permit condition requiring DOE to create and maintain a repository for information relating to ground water discharge permit DP-831.
- C. The Bureau's public participation process and the requirements of the Regulations regarding public participation. The written and oral technical testimony presented

by GWQB's, and DOE's expert witnesses established conclusively that the Bureau's public participation process met or exceeded the requirements of the Regulations regarding public participation.

D. The Bureau's calibration requirement in Condition #33 of the Draft Permit. The concerns raised by one or more of the Requesting Parties regarding the calibration requirement in Draft Permit Condition #33 were addressed to the satisfaction of those Parties prior to and during the public hearing.

#### II. APPLICABLE LAW

New Mexico Water Quality Act, NMSA 1978, §§ 74-6-1 - 74-6-17.

New Mexico Ground and Surface Water Protection Regulations – Permitting and Ground Water Standards, 20.6.2.3101-3114 NMAC.

New Mexico Environment Department Permitting Procedure, 20.1.4 NMAC.

#### III. RECOMMENDATION

Based upon the Hearing Record in its entirety, including the post-hearing submittals, I recommend that the renewal and modification of DP-831 be approved, as set forth in the Administrative Record. What follows is drawn from Parties' post-hearing submissions based on the relevant evidence ruled admissible through the Orders entered as of record, and the facts that I find credible and reliable.

#### IV. FINDINGS OF FACT

#### The Parties

The Bureau is an organizational unit within the Department's Water Protection Division.
 Pursuant to the WQA and Regulations, the Bureau is the administrative subdivision charged with reviewing the Application in this matter and making a recommendation regarding whether the permit renewal and modification in this matter should be granted

- by the Secretary of the Environment [NMSA 1978, §§ 9-7A-4, 6 to -9 (1991); 74-6-4(E); 74-6-5(A); 20.6.2.3109 NMAC].
- 2. The U.S. Department of Energy is the federal agency charged with the responsibility to manage radioactive materials, including radioactive waste. DOE is the agency tasked with administering the Waste Isolation Pilot Plant [42 U.S.C. §§ 2011; 7112; 7151(a) (2018)].
- 3. Concerned Citizens for Nuclear Safety is a non-profit organization and an Interested party in this matter.
- 4. Nuclear Watch New Mexico is a non-profit organization and an Interested party in this matter.
- 5. Deborah Reade is an Interested party in this matter.
- 6. Southwest Research and Information Center is a non-profit organization and an Interested party in this matter.

## **Groundwater and Geologic Conditions**

- 7. The WIPP Facility is geologically situated in the southeast portion of New Mexico within the Delaware Basin, which is part of the larger Permian Basin [NMED Ex. 3 at 14:17-18; AR Nos. 03051-03121]
- 8. The geologic formations below the Facility that are pertinent to this Discharge Permit, from deepest to shallowest, include: the Salado Formation (851 to 2,150 feet below ground surface ["bgs"]), the Rustler Formation (546 to 851 feet bgs), the Dewey Lake Formation (54 to 564 feet bgs), and, in the northeastern portion of the Facility, the Santa Rosa Formation (34 to 54 feet bgs) [NMED Ex. 3 at 14:18-22; AR Nos. 03051-03121].

- 9. The Salado Formation consists predominately of polyhalite, with some halite, carbonates, anhydrites, and clay seams. The Rustler Formation consists of carbonates, anhydrites, and halites. The Dewey Lake Formation consists almost entirely of mudstone, claystone, siltstone, and interbedded sandstone, and is frequently referred to as the Dewey Lake Redbeds Formation [NMED Ex. 3 at 14:22 to 15:3; AR Nos. 03051-03121].
- 10. Geologists use the terms upper, middle, and lower Dewey Lake to describe the stratigraphic position in the Formation and characteristics that related to the occurrence of saturated conditions within the Formation. The upper Dewey Lake consists of a thick, generally unsaturated section. The middle Dewey Lake occurs above a sulfate cementation change, which results in saturated conditions and a natural water table in limited areas within the section. The lower Dewey Lake is below the sulfate cementation change and has low permeability. Above the Dewey Lake Formation, the Santa Rosa Formation consists of gray and red sandstone with lenses of shale and conglomerate [NMED Ex. 3 at 15:3-9; AR Nos. 03051-03121].
- 11. The vadose zone consists, from shallowest to deepest, of Quaternary dune sand (0 to 7.5 feet bgs), Mescalero caliche (7.5 to 17 feet bgs), and the Gatuña Formation (17 to 34 feet bgs). Recharge rates through the native soils are extremely low and there is little recharge through the vadose zone to the Santa Rosa Formation [NMED Ex. 3 at 15:10-13; AR Nos. 03051-03121].
- 12. Natural groundwater is located in the middle portion of the Dewey Lake Formation at a depth of approximately 160 feet and has an average TDS concentration of approximately 3,400 milligrams per liter [NMED Ex. 3 at 15:14-16; AR Nos. 03086-03087].

- 13. DOE discovered a perched water zone in the lower Santa Rosa and upper Dewey Lake Formations in 1995 and determined that the probable sources of this shallow groundwater were the unlined impoundments constructed to capture stormwater runoff at the Facility and runoff from the above-ground salt piles. This shallow groundwater is contaminated with total dissolved solids, sulfate (SO4), and chloride. After the discovery of the anthropogenically created shallow groundwater (referred to as shallow groundwater), DOE lined all impoundments at the Facility and installed a network of monitoring wells. The shallow groundwater has a flow direction of north to south. Discharge Permit Condition 63 requires DOE to conduct a site investigation to evaluate the efficacy of existing source controls (impoundment liners), to determine the current lateral and vertical extent of the shallow contaminated groundwater, and to identify any potential impacts to the downgradient and naturally occurring groundwater in the Dewey Lake Formation [NMED Ex. 3 at 15:16 to 16:4; AR Nos. 03086-03087].
- 14. The site investigation may build upon the previous investigations completed by Daniel B. Stephens and Associates in 2003 and 2008 [NMED Ex. 3 at 16:4-6; AR Nos. 00766-00876; 01788-02120].
- 15. Natural, non-anthropogenic, groundwater occurs in the Dewey Lake Formation (referred to as natural groundwater in the Dewey Lake Formation) south of the Facility at a depth of 160 feet. The Dewey Lake Formation has a relatively low hydraulic conductivity [NMED Ex. 3 at 16:7-10; AR Nos. 03051-03121].
- 16. The first laterally continuous water-bearing zone below the Facility is within an approximately 30-foot-thick section of the Culebra Member of the Rustler Formation.

  Water in the Culebra Member is usually present in fractures and is confined by overlaying

anhydrite and underlying clay and anhydrite beds. A network of groundwater monitoring wells monitors the Culebra Member [NMED Ex. 3 at 16:11-15; AR Nos. 03051-03121].

### **Procedural History and Jurisdictional Matters**

- 17. The administrative process in this matter began with DOE's submittal of the application for renewal and modification of DP-831 which was submitted on December 3, 2018, pursuant to Subsection G of 20.6.2.3106 NMAC [AR 02787-02863; AR 03518-03519].
- 18. Post-submittal interactions with the GWQB documented in the Administrative Record included the following:
  - a. AR 02786 12/4/2018, to Nuclear Waste Partnership LLC, from N.M.
     Environment Dept. ("NMED") Acknowledgement of Receipt
  - b. AR 02780-02785 1/16/2019, from NMED, to WIPP, Letter, Administrative
     Completeness Determination and DOE's Public Notice Requirements, DP-831,
     Waste Isolation Pilot Plant (pursuant to Subsection A of 20.6.2.3108 NMAC)
  - c. AR 02772-02779 3/5/2019, from Michael Brown, WIPP, to Michelle Hunter,
     NMED, Letter, Groundwater Discharge Permit 831 Renewal/Modification
     Application Affidavit of Public Notice Completion (pursuant to Subsection D of 20.6.2.3108 NMAC)
  - d. AR 03444-03447 3/12/2019, from Steve Pullen, NMED, to DOE, Letter,
     Changes to Ground Water Standards at 20.6.2.3103 NMAC
  - e. AR 02737 4/25/2019, from Michael Brown, WIPP, to Michelle Hunter, NMED,
    Letter, Discharge Permit 831 Permit Modification Renewal/Modification, Part III
    Additional Proposals and Conditions

- f. AR 03390-03443 11/26/2019, Preliminary Draft Discharge Permit Renewal/Modification
- g. AR 03374-03380 1/6/2020, from Josh Vajda, WIPP, to Avery Young, NMED, Email, DP831 Draft Permit Comments & Recommendations
- h. AR 03367-03373 1/14/2020, from Avery Young, NMED, to Rick Chavez,

  Nuclear Waste Partnership LLC, Email, WIPP Comments with NMED Responses
- AR 03294-03366 1/15/2020, from Avery Young, NMED, to Steve Pullen,
   NMED, Email, Design Drawings & Technical Specification for the LDCRS
- j. AR 03279-03293 1/27/2020, Report, DP-831 Well Decision Plan Wells for Pond 4, Pond 5, Facultative Lagoon, an[sic] H-19 to address draft Discharge Permit Conditions 51-52.
- k. AR 03276-03278 1/31/2020, from Avery Young, NMED, to Mike Brown,
   WIPP, Letter, NMED Concerns Regarding the DP-831 Well Decision Plan, DP-831, Waste Isolation Pilot Plant
- AR 03261-03275 2/18/2020, Report, DP-831 Well Decision Plan Wells for Pond 4, Pond 5, Facultative Lagoon, an[sic] H-19 to address draft Discharge Permit Conditions 51-52.
- m. AR 03260 2/20/2020, from Avery Young, NMED, to Mike Brown, WIPP,
   Letter, Proposed Monitoring Well Location Approval, DP-831, Waste Isolation
   Pilot Plant. (This addressed draft Discharge Permit Conditions 51-52.)
- n. AR 03240-03259 2/24/2020, Report, WIPP Pond Calculation Methodology
- AR 03238-03239 2/24/2020, from Josh Vajda, WIPP, to Avery Young, NMED,
   Email, WIPP Leak Detection Condition

- p. AR 03177-03237 3/2/2020, from Avery Young, NMED, to Gregory Sosson,
   WIPP, Letter, Draft Discharge Permit renewal and modification, DP-831, Waste
   Isolation Pilot Plant (pursuant to Subsections H and J of 20.6.2.3108 NMAC)
- q. AR 03159 3/10/2020, from David Ganaway, WIPP, to Avery Young, NMED,
   Email, Comments on the Draft DP-831 Permit Dated March 2, 2020
- r. AR 03156-03158 4/16/2020, from Gregory Sosson, NMED [sic], to Avery Young, NMED, Letter, DOE Comments on the Draft Discharge Permit renewal and modification, DP-831, Waste Isolation Pilot Plant
- s. AR 03126-03128 6/29/2020, from Rick Salness, Nuclear Waste Partnership LLC, to Avery Young, NMED, Email, Drilling
- t. AR 03122-03125 6/16/2020, from Josh Vajda, WIPP, to Avery Young, NMED,
   Email, WIPP Facultative Lagoon System Design Drawing 1987
- u. AR 03051-03121 9/24/2020, from Avery Young, NMED, to Reinhard Knerr,
   WIPP, Letter, Draft Discharge Permit renewal and modification, DP-831, Waste
   Isolation Pilot Plant (pursuant to Subsections H and J of 20.6.2.3108 NMAC)
- v. AR 03024-03027 10/10/2020, from Michelle Cook, WIPP, to Avery Young, NMED, Email, DOE Comments on the Draft Discharge Permit renewal and modification, DP-831, Waste Isolation Pilot Plant
- w. AR 03510 9/29-9/30/2020, Report, Inspection Report
- 19. Contents of the application for renewal and modification provided and addressed the information necessary for evaluation of a Discharge Permit. Pursuant to Section 20.6.2.3108 NMAC of the Regulations, the GWQB determined on January 7, 2019, that

- the application (renewal and modification) was administratively complete [DOE Exhibit 3, p.13, lines 1-6; AR 02780-02785].
- 20. On March 2, 2020, the GWQB gave notice to DOE of the proposed approval of Ground Water Discharge Permit renewal and modification, DP-831, pursuant to Subsections H and J of 20.6.2.3108 NMAC [DOE Exhibit 3, p.13, lines 9-11; AR 03177-03237].
- 21. Pursuant to Subsection B of 20.6.2.3108 NMAC, DOE fulfilled the Ground Water Discharge Permit public notice requirements. On March 5, 2019, DOE provided the GWQB an Affidavit of Public Notice Completion pursuant to Subsection D of 20.6.2.3108 NMAC [DOE Exhibit 3, p.13, lines 6-9; AR 02772-02779]. This information included the following:
  - a. Posted a sign for 30 days displaying a synopsis of the public notice in English and in Spanish
  - b. Posted public notice flyer at conspicuous off-site location
  - c. Placed synopsis of public notice in English and Spanish in a newspaper
  - d. Sent the public notice to owners of adjacent property
- 22. DOEs provided two paper copies of the completed signed application, an electronic copy of the signed application and all supporting documents on a compact disk to the Program Manager, Ground Water Pollution Prevention Section, NMED, P.O. Box 5469, Santa Fe, NM 87502, pursuant to "Ground Water Discharge Application Form, Version 1.0, August 1, 2015." [AR 02787-02863; AR 03518-03519].
- 23. The application for renewal and modification included and adequately addressed the information necessary for evaluation of a new Discharge Permit pursuant to Subsection G of 20.6.2.3106 NMAC [DOE Exhibit 3, p.13, lines 1-6].

- 24. Previously submitted material was included by reference to the existing 2014 DP-831 Permit [DOE Exhibit 3, p.7, lines 1-3].
- 25. Pursuant to Subsection A of 20.6.2.3108 NMAC, on January 16, 2019, the GWQB informed DOE in writing that the application submitted was administratively complete and that pursuant to Subsection B of 20.6.2.3108 NMAC DOE is required to provide notice, in accordance with the requirements of Subsection F of 20.6.2.3108 NMAC, to the general public in the locale of the proposed discharge using forms sent to them by the GWQB [DOE Exhibit 3, p.13, lines 1-6; AR 02780-02785].
- 26. Pursuant to Subsection E of 20.6.2.3108 NMAC, the GWQB issued a Public Notice on January 22, 2019, informing the public of the receipt of an application for a discharge permit renewal/modification and that the application has been deemed administratively complete pursuant to Subsection F of 20.6.2.3108 NMAC [AR. 03468-03492].
- 27. On March 5, 2019, DOE submitted proof of the completed public notice requirements to the GWQB pursuant to Subsection D of 20.6.2.3108 NMAC [AR 02772-02779].
- 28. On March 2, 2020, the GWQB gave notice to DOE of the proposed approval of Ground Water Discharge Permit renewal and modification, DP-831, pursuant to Subsections H and J of 20.6.2.3108 NMAC [DOE Exhibit 3, p.13, lines 9-11].
- 29. The GWQB issued the draft groundwater Discharge Permit renewal and modification DP-831 to DOE on September 24, 2020, pursuant to the New Mexico Water Quality Act WQA NMSA 1978 §§74-6-1 through 74-6-17, and the New Mexico Water Quality Control Commission (WQCC) Ground and Surface Water Protection Regulations, 20.6.2 NMAC [AR 03051-03121].

- 30. The GWQB stated the purpose in issuing the draft Discharge Permit, and in imposing the requirements and conditions specified therein, is to control the discharge of water contaminants from the WIPP facility in order to protect groundwater and those segments of surface water gaining from groundwater inflow for present and potential future use as domestic and agricultural water supply and other uses, and to protect public health [AR 03051-03121].
- 31. The GWQB made the determination in issuing the draft Discharge Permit that DOE has met the requirements of Subsection C of 20.6.2.3109 NMAC. DOE is responsible for complying with the terms and conditions of this Discharge Permit pursuant to Section 20.6.2.3104 NMAC1; failure may result in an GWQB enforcement action(s) (20.6.2.1220 NMAC) [AR 03051-03121].

#### The Draft Permit

- 32. The terms and conditions for each groundwater discharge permit consist of the following four components: (1) operational plan; (2) monitoring and reporting requirements; (3) contingency plan; and (4) closure plan [NMED Ex. 1 at 6:14-16].
- 33. The Draft Permit authorizes the discharge of non-hazardous, non-radioactive domestic and industrial wastewaters [NMED Ex. 3 at 3:7-8; AR Nos. 03051-03121].
- 34. The Draft Permit authorizes the discharge of up to 23,000 gallons per day ("gpd") of domestic wastewater to a synthetically lined impoundment system ("Facultative Lagoon")

<sup>&</sup>lt;sup>1</sup> A groundwater discharge permit is required for WIPP for three reasons: (1) DOE is discharging effluent in a manner such that the effluent may move directly or indirectly into groundwater within the meaning of 20.6.2.3104 NMAC; (2) the discharge is such that effluent may move into groundwater of the State of New Mexico, which has an existing total dissolved solids concentration of less than 10,000 mg/L within the meaning of 20.6.2.3101(A) NMAC; and (3) the discharge is into or within a place of withdrawal of groundwater for the present or the reasonably foreseeable future use within the meaning of the WQA, NMSA 1978, § 74-6-5(E)(3) and 20.6.2.3103 NMAC [NMED Ex. 1 at 4:7-14]

- **System**") consisting of seven synthetically lined impoundments for disposal by evaporation [NMED Ex. 3 at 8-11; AR Nos. 03051-03121].
- 35. The Draft Permit authorizes the discharge of non-domestic, industrial wastewater at the Facility to numerous discharge locations [NMED Ex. 3 at 3:12-13].
- 36. Effluent Lagoons B and C of the Facultative Lagoon System receive industrial wastewater at a volume of up to 27,000 gpd from the following sources: wastewater from compressed air systems, brine, purge waters from sampling and developing Facility monitoring wells, and other miscellaneous industrial non-hazardous, non-radioactive wastewaters, for disposal by evaporation [NMED Ex. 3 at 3:13-17; AR No. 03051-03121].
- 37. Evaporation Pond H-19 receives industrial wastewater at a volume of up to 50,000 gpd from the following sources: Facility generated brine, purge waters from sampling and developing Facility monitoring wells, condensate from the Exhaust Shaft fan ductwork on the surface, and water collected from the Waste Shaft Sump and Exhaust Shaft Interception Wells, for disposal by evaporation [NMED Ex. 3 at 3:17-21; AR Nos. 03051-03121].
- 38. Brine Retention Ponds East and West (collectively the Brine Ponds) will, upon construction, receive industrial wastewater at a maximum volume of 2,210 gpd from the to-be-constructed Salt Reduction System for disposal by evaporation [NMED Ex. 3 at 3:21-23; AR Nos. 03051-03121].
- 39. Storm Water Ponds 1, 2, and 3 receive stormwater runoff from the Facility's paved areas and roofs for disposal by evaporation [NMED Ex. 3 at 4:1-2; AR Nos. 03051-03121].

- 40. Brine Salt Storage Pond 4 receives stormwater runoff from the Safety Significant Confinement Ventilation System area for disposal by evaporation [NMED Ex. 3 at 4:2-4].
- 41. Salt Storage Ponds 1, 2, 3, and 5 receive stormwater in contact with mined salt for disposal by evaporation [NMED Ex. 3 at 4:3-4; AR Nos. 03051-03121].
- 42. The Draft Permit authorizes Salt Cells 2, 3, and 5 to store mined salt on the surface in three stockpiles. The maximum authorized volumes of the majority of the ponds and the salt storage cells is controlled by the capacity of the ponds and cells and the Permit-required freeboard, which is the required extra space above the waterline in the impoundment to accommodate extraneous environmental impacts, of the ponds [NMED Ex. 3 at 4:5-9; AR Nos. 03051-03121].
- 43. The Permit Modification, defined by 20.6.2.7(D)(4) NMAC as a change of location, quantity, or quality of the discharged material, consists of the addition to the Permit of the following five previously mentioned discharge locations: Salt Cell 5, Salt Storage Pond 5, Brine Salt Storage Pond 4, Brine Retention Pond East, and Brine Retention Pond West [NMED Ex. 3 at 4:10-13; AR Nos. 03051-03121].
- 44. Salt Storage Pond 5 will receive both the leachate and stormwater in contact with salt located in Salt Cell 5. Brine Salt Storage Pond 4, Brine Retention Pond East, and Brine Retention Pond West will receive wastewater from the new Salt Reduction System [NMED Ex. 3 at 4:13-16; AR Nos. 03051-03121].
- 45. DOE has closed (i.e., discontinued use and instituted stabilization of) two discharge locations, Salt Cell 1 and the Site and Preliminary Design Validation ("SPDV") material

- pile. The SPDV material pile previously received material excavated when construction began at the Facility. [NMED Ex. 3 at 4:18-19; AR Nos. 03051-03121].
- 46. Both closed material piles have engineered covers to minimize infiltration and to control stormwater runoff. Permit-required monitoring wells will continue to monitor possible groundwater impacts from these two closed units [NMED Ex. 3 at 4:19-23; AR Nos. 03051-03121].
- 47. In the 2018 permit renewal and modification application, DOE requested to modify the basis of the authorized discharge volume for stormwater from a 24-hour, 45-year rainfall event of 3.9 inches, to a 24-hour, 100-year rainfall event of 5.84 inches due to the increasing intensity of storm events in the area [NMED Ex. 3 at 6:10-13; AR Nos. 02787-02863].
- 48. The Bureau drafted the Draft Permit to authorize the discharge of stormwater based on the capacity of the stormwater impoundments instead of on the intensity of the stormwater event [NMED Ex. 3 at 6:13-15; AR Nos. 03051-03121].
- 49. Adequate impoundment capacity, regardless of the size of storm events, is the factor that most protects groundwater [NMED Ex. 3 at 6:15-16; AR Nos. 03051-03121].
- 50. Previous groundwater discharge permits for the Facility did not require installation of fences around the stormwater impoundments. The Bureau determined that the absence of a fencing requirement had been an oversight [NMED Ex. 3 at 6:18-20; AR Nos. 03066; 03069].
- 51. For the Bureau to treat permitted all facilities with impoundments consistently, the Bureau will require fence installation around all stormwater impoundments at the Facility as a condition of the Permit [NMED Ex. 3 at 6:20-22; AR Nos. 03066; 03069].

- 52. Due to the varied and new sources of industrial wastewater discharges at the Facility, the Bureau added conditions requiring a more rigorous chemical characterization of that wastewater and to obtain a more rigorous chemical characterization of the groundwater at the Facility [NMED Ex. 3 at 7:1-4; AR Nos. 03074; 03076-03078; 03083].
- 53. The Draft Permit requires the installation of four new groundwater monitoring wells to monitor groundwater associated with newly authorized impoundments, to replace an improperly located well, and to monitor previously unmonitored locations [NMED Ex. 3 at 7:6-8; AR No. 03080].
- 54. The Draft Permit requires the installation of one monitoring well downgradient of the Facultative Lagoon System replacing an improperly located well. The Draft Permit requires installation of one monitoring well downgradient of Evaporation Pond H-19 to monitor the integrity of the impoundment's single, 40-mil synthetic liner. The Draft Permit requires the installation of one monitoring well downgradient of the proposed Brine Salt Storage Pond 4 to monitor that impoundment system. The Draft Permit requires the installation of one well downgradient of the proposed Salt Storage Pond 5 in order to monitor that impoundment system [NMED Ex. 3 at 7:8-16; AR No. 03080].
- 55. The addition to the Draft Permit of these four monitoring wells satisfies the regulatory requirement of 20.6.2.3107(A)(2) NMAC [NMED Ex. 3 at 7:15-16; AR No. 03080].
- 56. The Bureau included in the Draft Permit a requirement for an additional study to address Condition 26 of WIPP's previous Discharge Permit (dated July 29, 2014), that required a response to exceedances to the standards of 20.6.2.3103 NAMC in groundwater at the Facility. [NMED Ex. 3 at 7:18-21; AR No. 03086].

- 57. Facility records identify the probable source of this groundwater contamination as the unlined stormwater impoundments prior to their lining in 2005 [NMED Ex. 3 at 7:21-22; AR Nos. 00456; 00461-00474].
- 58. The purpose of the additional study is to determine the efficacy of existing source controls, to determine the current lateral and vertical extent of this contaminated shallow groundwater, and to identify any potential impacts to the naturally occurring downgradient groundwater in the Dewey Lake Formation. [NMED Ex. 3 at 7:23 to 8:1-3].
- 59. The newly required site groundwater investigation will augment previous investigations completed by Daniel B. Stephens and Associates in 2003 and 2008 [NMED Ex. 3 at 8:3-5; AR Nos. 00766-00876; 01788-02120].
- 60. This requirement is consistent with 20.6.2.3107 NMAC, which allows the Secretary to require a system of monitoring and reporting to verify that a discharge permit is achieving the expected results and to require reporting of other information [NMED Ex. 3 at 8:6-8].
- 61. The site investigation will provide additional information necessary to prevent further groundwater contamination and to determine the necessity of corrective action or abatement of that groundwater contamination [NMED Ex. 3 at 8:8-10].

## **Facility Compliance History**

62. The Bureau has performed periodic site inspections at the Facility in order to evaluate general compliance with the discharge permit. Those inspections were performed on the following dates: February 3, 2000, August 27, 2002, August 11, 2004, January 14, 2014,

- September 14, 2018, and October 14, 2020 [NMED Ex. 3 at 13:23 to 14:4; AR Nos. 00630-00631; 00475-00477; 00718-00719; 02585-02594; 03508-03509; 03510-03517].
- 63. Since WIPP began discharging under a discharge permit in 1992, the Facility has been issued two notices of violations ("NOV") [NMED Ex. 3 at 14:5-7].
- 64. The first NOV was issued to WIPP on November 14, 2008, by the Bureau for an unauthorized discharge to H-19 Evaporation Pond of 150 gallons of wastewater containing a lead concentration that exceeded 5 mg/L, making it hazardous waste, and therefore, not disposing of the wastewater in the correct manner [NMED Ex. 3 at 14:7-10; AR Nos. 01776-01778].
- 65. On March 3, 2009, the Bureau issued the second NOV to WIPP for an unauthorized discharge of wastewater that had overflowed from a salt storage pond onto an unlined spillway and to the ground. A condition of WIPP's permit at the time required the spillway to be lined [NMED Ex. 3 at 14:10-13; AR Nos. 01776-01778].
- 66. DOE resolved both violations in their entirety to the satisfaction of the Bureau [NMED Ex. 3 at 14:13-14].
- 67. A notice of noncompliance was issued to WIPP on September 3, 2021. As of the date of the hearing, WIPP was in the process of resolving the noncompliance issue [9-7-21 Tr. 96:1-5].

#### **Public Notice and Fact Sheet for the Draft Permit**

68. Pursuant to Subsections H, I, and M of 20.6.2.3108 NMAC, the GWQB issued a Public Notice in English and Spanish on March 8, 2020, making the Draft Permit and Fact Sheet available for the public comment and written public hearing requests for a period of at

- least 30 days. The GWQB issued the Public Notice for a 45-day comment period ending on April 22, 2020 [AR 03160-03165].
- 69. Pursuant to Subsection J of 20.6.2.3108 NMAC, on March 8, 2020, the Albuquerque Journal, a newspaper of general circulation in the state, and the Carlsbad Current-Argus, a daily newspaper published in the area where the Facility is located, published the Public Notice for the Draft Permit and Fact Sheet [AR 03166-03176].
- 70. Pursuant to Subsection J of 20.6.2.3108 NMAC, the Public Notice was mailed to the WIPP facility-specific mailing list, to governmental units within the state, including local, state, federal governmental agencies, ditch associations, and land grants, and to each Indian tribe, pueblo, and nation within the state [AR 03493-03499].
- 71. Pursuant to Subsection J of 20.6.2.3108 NMAC, the GWQB posted the Draft Permit,

  Public Notice, and Fact Sheet on the GWQB's website on March 8, 2020 [NMED Exhibit

  3].
- 72. Groundwater Quality Bureau Draft Permit binders, containing documents pertinent to the Draft Permit, were made available in hardcopy format at the following local information repositories on March 8, 2020 [NMED Exhibit 3]:
  - a. NMED Carlsbad Field Office, 406 N. Guadalupe, Carlsbad, New Mexico 88220
  - b. Carlsbad Public Library, 1010 S. Halagueno Street, Carlsbad, New Mexico 88220
  - c. Eunice Public Library, 1003 Avenue N, Eunice, New Mexico 88231
- 73. The comment period for the Public Notice began on March 8, 2020, which began a 45-day comment period. The Bureau identified the NMED Carlsbad Field Office, the Eunice Public Library, and the Carlsbad Public Library as local document repositories for the public to have access to physical copies of important documents that pertain to the Draft

Permit. The NMED closed the Carlsbad Field Office to the public around March 13, 2020, due to the COVID-19 Public Health Emergency. On March 19, 2020, the Bureau confirmed that the Carlsbad Public Library had closed to the public. The Eunice Public Library reportedly closed soon after that. Due to the COVID-19 Public Health Emergency, the three locations that housed the document repositories were closed to the public for much of the 45-day public comment period, and, therefore, the public did not have access to the physical copies of the Draft Permit and supporting documents for the public to look at the materials and submit a comment if they chose to. Due to this situation, the Bureau made the decision to re-publish the public notice for the draft Discharge Permit [NMED Exhibit 3].

- 74. Pursuant Subsections H, I, and M of 20.6.2.3108 NMAC, the GWQB issued a Public Notice in English and Spanish on October 1, 2020, making an updated Draft Permit and updated Fact Sheet available for the public comment and written public hearing requests for a period of at least 30 days. The GWQB issued the Public Notice for a 45-day comment period ending on November 15, 2020. The notice contained all the regulatorily-required information, pursuant to Subsection F of 20.6.2.3108 NMAC [AR03044-03050].
- 75. Pursuant to Subsection J of 20.6.2.3108 NMAC, on October 1, 2020, the Albuquerque Journal, a newspaper of general circulation in the state, and the Carlsbad Current-Argus, a daily newspaper published in the area where the Facility is located, published the Public Notice in English and Spanish [AR 03028-03043].
- 76. Pursuant to Subsection J of 20.6.2.3108 NMAC, the Public Notice was mailed to the updated the WIPP facility-specific mailing list, to governmental units within the state,

- including local, state, federal governmental agencies, ditch associations, and land grants, and to each Indian tribe, pueblo, and nation within the state [AR 03493-03499].
- 77. Pursuant to Subsection J of 20.6.2.3108 NMAC, the GWQB posted the Draft Permit,
  Public Notice, and Fact Sheet on the Groundwater Quality Bureau's website on October
  1, 2020. Groundwater Quality Bureau Draft Discharge Permit binders, containing
  documents pertinent to the Draft Permit, were made available in hardcopy format at the
  following local information repositories on October 1, 2020 [NMED Exhibit 3]:
  - Carlsbad Public Library, 1010 S. Halagueno Street, Carlsbad, New Mexico 88220
  - Eunice Public Library, 1003 Avenue N, Eunice, New Mexico 88231
- 78. The NMED Secretary issued a Notice of Hearing and Appointment of Hearing Officer Order on April 13, 2021.
- 79. On July 6, 2021, and July 8, 2021, the Hearing Officer issued Orders on the Motions *in limine* filed by NMED and DOE.
- 80. The Parties entered into a Stipulation and Agreement on August 19, 2021, and the Hearing Officer issued an Order entering the stipulation and agreement into the Record on August 25, 2021.
- 81. A hearing was conducted on September 7-8, 2021, pursuant to the NMED's Permit Procedures regulations, 20.1.4 NMAC and the NMED Ground and Surface Water Protection regulations, 20.6.2.3110 NMAC.
- 82. Members of the public provided general comment by email and verbally at the public hearing. The Office of Public Facilitation received twenty-eight (28) emails in opposition and one (1) in favor. The over-arching reason the public was opposed to granting the Discharge Permit was that it was to be used for "future expansion" of the WIPP facility,

because in their view, the salt mined from Shaft #5 was not just for ventilation purposes. The vote in favor was qualified by the need for "additional conditions," which were not specified. At the hearing, three members of the public voiced their opposition to the Discharge Permit, and their views were mirrored in their written submittals. On the other hand, the mayor of Carlsbad recommended approval of the permit to "protect groundwater near the facility."

#### **Substantive Matters**

- 83. The WIPP was authorized in 1979 by Public Law 96-162 as a facility to demonstrate the safe disposal of radioactive waste materials generated by atomic energy defense activities [DOE Exhibit 1, p.5, lines 1-6].
- 84. The WIPP Land Withdrawal Act passed in 1992 as Public Law 102-579 limited the disposal use of the Waste Isolation Pilot Plant facility to defense-generated transuranic waste which are defined as waste containing more than 100 nanocuries of alpharadiation emitting transuranic isotopes per gram of waste. The half-lives of the isotopes of these elements must be greater than 20 years [DOE Exhibit 1, p.5, lines 10-12].
- 85. The facility began disposal operations in March 1999 [DOE Exhibit 1, p.5, line 9].
- 86. DOE has instituted an Environmental Management System (**EMS**) at the WIPP facility. The EMS is prepared and certified to the standards of the International Organization for Standardization ISO 14001:2015. The EMS is a technique to systematically identify the environmental obligations of DOE and assures there are sufficient personnel, parts, and procedures to meet these environmental obligations [DOE Exhibit 1, pp.5-6, lines 19-20, 1-6].

- 87. The DP-831 Permit has been part of the EMS planning process since the EMS inception at the WIPP facility [September 7, 2021, Transcript. p.28, lines 9-11].
- 88. The WIPP facility consists of 10,240 acres of federal land that is located in a sparsely populated area. The area surrounding the facility is used primarily for grazing, potash mining, and hydrocarbon production [DOE Exhibit 1, p.6, lines 13-17].
- 89. There are no surface waters of the United States that could be affected by discharges at the WIPP facility or nearby [September 7, 2021, Transcript. p.28, lines 21-23].
- 90. No resource development that would affect the WIPP facility operations or the long-term integrity of the facility or its near-surface groundwater is allowed within the lands that have been set aside for the use by DOE for the WIPP facility [DOE Exhibit 1, p.6, lines 17-20].
- 91. The disposal portion of the WIPP facility is a geologic repository mined within a 2,000 ft-thick bedded-salt formation known as the Salado Formation. The underground repository unit is 2,150 ft beneath the ground surface and is separated from near-surface waters by several very low permeability geologic strata [DOE Exhibit 1, p.6, lines 8-12].
- 92. The WIPP facility has been sited and designed to ensure safe operations and to be protective of human health and the environment. The normal maintenance and environmental monitoring activities at the facility will provide continued safety for the duration of the DP-831 Permit [DOE Exhibit 1, p.7, lines 6-9].
- 93. The draft discharge permit (Discharge Permit or DP-831) has been issued to control discharges from the WIPP facility for the protection of groundwater for present and potential future use as domestic and agricultural water supply [September 2020 Fact Sheet p.3].

- 94. Categories of waste types addressed in the draft Discharge Permit include domestic waste, industrial wastewaters, salt brine, stormwater runoff, and salt [September 2020 Fact Sheet p.3].
- 95. Lined wastewater collection and drainage systems allow the discharges to be treated by evaporation [September 2020 Fact Sheet p.3].
- 96. The draft Discharge Permit requires monitoring of the quantity and quality of the discharges [September 2020 Fact Sheet p. 8].
- 97. The draft Discharge Permit requires groundwater monitoring downgradient of the potential contaminant sources (i.e., impoundments, capped salt piles, uncapped salt piles, and impoundments containing industrial discharges) [September 2020 Fact Sheet p.8].
- 98. The original WIPP groundwater Discharge Permit (DP-831) was issued by NMED on January 16, 1992 [AR 00173-00180].
- 99. The Discharge Permit was amended on October 4, 1995 [AR 00317- 00318 & 00319- 00320].
- 100. The Discharge Permit was renewed on July 3, 1997 [AR 00649- 00656].
- 101. The Discharge Permit was amended on June 12, 1998 [AR 00635-00636].
- The Discharge Permit was amended on January 24, 2000 [AR 00632-00633].
- 103. The Discharge Permit was renewed on April 29, 2003 [AR 00407-00414].
- 104. The Discharge Permit was modified on December 22, 2003 [AR 00722-00732].
- 105. The Discharge Permit was modified on December 29, 2006 [AR 01578-01590].
- 106. The Discharge Permit was renewed and modified on September 9, 2008 [AR 01415- 01433].

- 107. The Discharge Permit was renewed on July 29, 2014 [AR 02943-02971; AR 02502-02530].
- 108. The application for renewal and modification was submitted by DOE on December 3, 2018 [AR 02787-02863].
- 109. The draft Discharge Permit was issued by the GWQB on September 24, 2020 [AR 03051- 03121].
- 110. The existing and proposed Discharge Permit implements the groundwater and surface water protection regulations contained in 20.6.2 NMAC [DOE Exhibit 2, p.3, lines 2-4].
- 111. Industrial wastewaters generated at the WIPP facility are either disposed of offsite or managed in on-site, lined evaporation ponds. The lined ponds intercept the leachate, and it is evaporated [DOE Exhibit 2, p.3, lines 9-12].
- 112. Storm water runoff from the WIPP facility is also collected in lined retention ponds. The storm water runoff does not contact groundwater as a result [DOE Exhibit 2, p.3, lines 10-13].
- 113. Monitoring wells and interstitial monitoring of the evaporation pond liners are used to detect leakage [DOE Exhibit 2, p.3, lines 13-14].
- The perched anthropogenic water ("PAW") at the WIPP facility occurs at the geologic contact between the Santa Rosa Formation ("Santa Rosa") and the Dewey Lake Redbeds Formation ("Dewey Lake"). This PAW is due to the permeability differences of the sediments within the formations, and the permeability decreases in the Dewey Lake at the contact [DOE Exhibit 2, p.3, lines 19-22].

- 115. Naturally occurring perched water is found in the middle of the Dewey Lake where the cementation changes from a calcium carbonate (calcite) to a sulfate cementation (gypsum). The gypsum cementation is less permeable than the more granular calcite cementation. Due to different permeabilities created by the two different cementation minerals, natural Dewey Lake water is perched at this depth within the formation [DOE Exhibit 2, p.3, lines 22-23 and p.4, lines 1-4].
- 116. The PAW is carefully monitored so that DOE can be assured that it does not intermingle with the naturally occurring groundwater in the middle Dewey Lake [DOE Exhibit 2, p.4, lines 5-6].
- 117. The PAW and the naturally occurring water in the middle of the Dewey Lake are distinct and not related to each other nor do they connect to each other [DOE Exhibit 2, p.4, lines 7-8].
- 118. The PAW monitoring program also supports leak detection should the liners have a breach [DOE Exhibit 2, p.4, lines 8-9].
- 119. Contingencies exist in case leaks are discovered or natural precipitation related events overwhelm the storage capabilities of the ponds [DOE Exhibit 2, p.4, lines 9-11].
- 120. Hydrogeology is consistent across the site as defined by the wells drilled to the Santa Rosa and Dewey Lake contact and the cementation change in the middle Dewey Lake [DOE Exhibit 2, p.9, lines 11-12].
- 121. The middle Dewey Lake natural groundwater has not been impacted by the PAW leakage from the Facultative Sewage Lagoon, or the H-19 evaporation pond [DOE Exhibit 2, p.10, lines 19-20].

- The nature and extent of the PAW has been defined to the west, east, and south of the WIPP Facility. The nature and extent of the PAW was defined by PZ-8, PZ-17a, PZ-18, and PZ 19a. No water was detected in PZ-18 at the location of Salt Cell 5 and Salt Pond 5 [DOE Exhibit 2, page 7 and 8, lines 21-23, 1-8].
- 123. The modification aspect of the Permit adds five new discharge points. These include Salt Cell 5, Salt Storage Pond 5, Brine Storage Pond 4, Brine Retention Pond East, Brine Retention Pond West [DOE Exhibit 3, p.4, lines 18-20].
- 124. Brine Storage Pond 4 (Latitude: 32 22 12.04, Longitude: -103 47 18.98) receives stormwater runoff from the facility's paved areas and roofs and provide capacity to receive brine from both Brine Retention Pond East and Brine Retention Pond West (DOE Exhibit 3, Exhibit 3-A) [DOE Exhibit 3, p.8, lines 21-23].
- 125. Brine Storage Pond 4 collects non-contact storm runoff at 1,857,927 gallons per day ("**gpd**"), which is based on the total inflow from a 24-hour, 100-year rainfall event (5.84 inches) plus 30,940 gpd of brine from the brine retention ponds (DOE Exhibit 3, Exhibits 3-E and 3-F). The 30,940 gallons is a batch load (accumulated over 14 days), monitored pursuant to Subsection A of 20.6.2.3107 NMAC, then disposed of appropriately, or transferred from the retention ponds into Brine Storage Pond 4 [DOE Exhibit 3, p.9, lines 1-6].
- 126. Because the brine pond transfer could occur within one day, the maximum daily discharge rate estimated into Brine Storage Pond 4 is 252,505 cu ft (1,888,867 gallons). The storm water pond has the capacity to contain 1,158,920 cu ft (8,669,324 gallons) of storm water/brine (DOE Exhibit 3, Exhibits 3-E and 3-F). Brine Storage Pond 4 can evaporate the water and brine. If brine, or any brine constituents are removed from the

- system during cleaning/maintenance, the constituents will be disposed of in accordance with applicable regulations [DOE Exhibit 3, p.11, lines 10-16].
- 127. Brine Storage Pond 4 is designed with a double high-density polyethylene ("HDPE") geomembrane liner (DOE Exhibit 3, Exhibit 3-G). A leak detection, collection, and removal system ("LDCRS") will be installed between the liners (DOE Exhibit 3, Exhibit 3-G). The LDCRS meets EPA530-R-92-004. The storm water runoff from the Safety Significant Confinement Ventilation System ("SSCVS") area is collected in storm drainage runoff ditches and catch basins and transferred into the storm water pond by storm drain lines (DOE Exhibit 3, Exhibits 3-A, 3-E, and 3-F) [DOE Exhibit 3, p.11, lines 1-5].
- Brine Retention Pond East (Latitude: 32 22 19.05, Longitude: -103 47 23.19) and Brine Retention Pond West (Latitude: 32 22 19.05, Longitude: -103 47 23.19) will receive brine from the Permanent Ventilation System's Salt Reduction Building operation (DOE Exhibit 3, Exhibit 3-A). One pond will be in service, while the other pond is closed for evaporation and removal of precipitated salt in order to maintain at least 24 inches of freeboard (DOE Exhibit 3, Exhibit 3-B). The quantity of brine discharged into the retention ponds is approximately 2,210 gpd (DOE Exhibit 3, Exhibits 3-B and 3-C). Any remaining brine in the closed brine pond will be transferred to Brine Storage Pond 4 for disposal by evaporation [DOE Exhibit 3, p.8, lines 13-20].
- 129. Each brine retention pond is designed to hold up to 14 days of expected average monthly production of brine (30,940 gallons) from the operations of the Salt Reduction System (DOE Exhibit 3, Exhibits 3-B and 3-C). The estimated daily rate of brine production is estimated at 2,210 gpd [DOE Exhibit 3, p.10, lines 7-10].

- 130. To account for the 100-year rainfall event over 24 hours (5.84 inches), the use of the East and West Brine Retention Ponds will be rotated approximately every two weeks, or as needed, to maintain 24 inches of freeboard during maximum inflow conditions, which allows for 6,162 cu ft (46,094 gallons) of storage in each brine retention pond [DOE Exhibit 3, p.10, lines 12-16].
- 131. The East and West Brine Retention Ponds will be double lined with a 60-mil HDPE geomembrane liner with a leak detection, collection, and removal system (DOE Exhibit 3, Exhibits 3-D and 3-G). The LDCRS meets EPA530-R-92-004. The bottom of the East and West Brine Retention Ponds will have an epoxy coated concrete bottom on top of the geomembrane liner (DOE Exhibit 3, Exhibit 3-D). The concrete will allow for removing the salt by mechanical means without damaging the liner (DOE Exhibit 3, Exhibit 3-D) [DOE Exhibit 3, p.10, lines 16-21].
- The renewal aspect found in the draft Permit includes existing Salt Cells 1, 2, and 3, Salt Storage Pond 1, Salt Storage Pond 2/3, Storm Water Ponds 1, 2, and 3, the Facultative Sewage Lagoon System (Effluent Lagoons A, B, and C, Settling Lagoons 1 and 2, and Polishing Lagoons 1 and 2), the Site and Preliminary Design Validation SPDV material pile, and Evaporation Pond H-19 [DOE Exhibit 3, p.3, lines 19-23].
- 133. Previously submitted material was included by reference to the existing (renewing) 2014 DP-831 Permit [DOE Exhibit 3, p.7, lines 1-3]
- 134. These impoundments and discharge points were approved for use in a previous issuance of the Discharge Permit [DOE Exhibit 3, p.4, lines 1-2].

- 135. No changes were made to the physical design, location, or discharge quality of the existing industrial wastewater discharge points, including the storm water ponds, since the start of the last Discharge Permit [DOE Exhibit 3, p.4, lines 5-7].
- These include Salt Cell 5, Salt Storage Pond 5, Brine Storage Pond 4, Brine Retention Pond East, and Brine Retention Pond West [DOE Exhibit 3, p.4, lines 18-20].
- 137. The maximum daily discharge for the facility is a sum from both domestic wastewater and industrial wastewater [DOE Exhibit 3, p.6, lines 1-2].
- 138. Maximum domestic wastewater discharge into the Facultative Sewage Lagoon System is 23,000 gpd [DOE Exhibit 3, p.6, lines 5-6].
- 139. The total industrial wastewater discharge is estimated to be 9,586,995 gpd, which is an increase from the previous Discharge Permit of 4,224,835 gpd [DOE Exhibit 3, p.6, lines 1214].
- 140. Examples of industrial wastewaters includes non-hazardous water and brine, wastewater from compressed air systems, brine from the Salt Reduction Building operations, and purge waters from sampling and developing WIPP facility monitoring wells [DOE Exhibit 3, p.6, lines 2-5].
- 141. Industrial wastewater discharge is primarily from storm water runoff from a 24-hour, 100-year rainfall event (5.84 inches), which meets salt storage locations (salt cells). This discharge is collected into salt storage ponds [DOE Exhibit 3, p.6, lines 6-9].
- 142. The previous industrial wastewater maximum daily discharge volume was based on a 24-hour, 25-year rainfall event (3.9 inches). Based on data collected at the facility, the 24-hour, 25-year rainfall event has been exceeded in recent years. Therefore, the

- criterion (rainfall total) is being modified to a 24-hour, 100-year rainfall event (5.84 inches), which is used to estimate the industrial wastewater daily maximum discharge volume for these discharge points, including storm water control [DOE Exhibit 3, p.4, lines 9-14].
- 143. The design capacities are sufficiently large to accommodate this change [DOE Exhibit 3, p.4, line 15].
- 144. Salt Cell 5 adds a new salt storage location (Latitude: 32 22 21.02, Longitude: 103 48 7.44), which will receive disturbed materials in the form of overburden and salt
  from the construction of Shaft 5 and its associated underground connecting drifts (DOE
  Exhibit 3, Exhibits 3-H and 3-I) [DOE Exhibit 3, p.8, lines 4-6].
- 145. Salt Cell 5 is designed to contain 5,224,000 cubic feet of disturbed materials in the form of mined salt from the WIPP underground (DOE Exhibit 3, Exhibits 3-I and 3-J) [DOE Exhibit 3, p.9, lines 9-10].
- 146. The cell will have a 60-mil HDPE liner with a protective soil layer on which salt haul trucks can place the salt without damaging the liner (DOE Exhibit 3, Exhibits 3-L and 3-M). A HDPE pipe is installed to route leachate and storm runoff water from direct natural infiltration of precipitation within Salt Cell 5 (DOE Exhibit 3, Exhibits 3-J and 3-L) into Salt Storage Pond 5 [DOE Exhibit 3, p.9, lines 10-14].
- 147. Salt Storage Pond 5 (Latitude: 32 22 20.25, Longitude: -103 48 13.22) will receive both the leachate and storm water from direct natural infiltration of precipitation in contact with disturbed materials in the form of mined salt located in Salt Cell 5 (DOE Exhibit 3, Exhibits 3-H, 3-J, and 3-L) [DOE Exhibit 3, p.8, lines 6-9].

- Salt Storage Pond 5 has the capacity to hold 849,653 cu ft (6,355,404 gallons) at Elevation 3,390 feet with 24 inches of freeboard (DOE Exhibit 3, Exhibits 3-K and 3-N) [DOE Exhibit 3, p.9, lines 21-23].
- 149. Salt Storage Pond 5 will increase the quantity of the current industrial wastewater maximum permitted discharge volume by 1,292,499 gpd, which is based on the total inflow from a 24-hour, 100-year rainfall event (5.84 inches) (DOE Exhibit 3, Exhibits 3-K and 3-N) [DOE Exhibit 3, p.5, lines 3-6].
- 150. Salt Storage Pond 5 is capable of containing and allowing for evaporation of brine collected from Salt Cell 5 [DOE Exhibit 3, p.10, lines 2-3].
- 151. Salt Storage Pond 5 is designed with a 60-mil HDPE geomembrane double liner with a LDCRS installed between the liners (DOE Exhibit 3, Exhibits 3-L and 3-M). The LDCRS meets EPA 530-R-92-004. A geomembrane liner is defined as a high-density polyethylene plastic liner, used for lining Salt Cell 5, and Salt Storage Pond 5 in accordance with NWP Specification E-Z-475, HDPE Geomembrane Liner, Geofabric, Geonet, and HDPE Pipe [DOE Exhibit 3, p.9, lines 16-21].
- Discharge to groundwater from Salt Storage Pond 5 is not possible because of its design and because no groundwater was found in PZ-18, which was drilled adjacent to Salt Storage Pond 5 [DOE Exhibit 2].

# **Notice of the Public Hearing and Public Participation**

153. Pursuant to 20.1.4.200(C)(2)(b) NMAC, the Bureau issued the Notice of Hearing in English and Spanish on July 20, 2021. The notice contained all the regulatorily-required information, pursuant to 20.1.4.200(C)(2)(a) NMAC [NMED Ex. 3 at 13:5-7; AR Nos. 03448-03455]

- Pursuant to 20.1.4.200(C)(2)(b) NMAC, on August 7, 2021, the *Albuquerque Journal*, a newspaper of general circulation in the state, and on August 5, 2021, the *Carlsbad Current-Argus*, a daily newspaper published in the area where the Facility is located, published the Notice of Hearing [NMED Ex. 3 at 13:8-11; AR Nos. 03456-03467].
- 155. Pursuant to 20.1.4.200(C)(2)(b) NMAC, on August 3, 2021, the Notice of Hearing was mailed to the WIPP-specific Facility mailing list, to governmental units within the state, including local, state, federal governmental agencies, ditch associations, and land grants, and to each Indian tribe, pueblo, and nation within the state [NMED Ex. 3 at 13:12-15; AR Nos. 03500-03507].
- 156. The Bureau posted the Notice of Hearing on the Bureau's website on July 20, 2021. [NMED Ex. 3 at 13:16].
- Draft Permit binders, containing documents pertinent to the Draft Permit, were made available in hardcopy format at the following local information repositories:

  Carlsbad Public Library, 1010 S. Halagueno Street, Carlsbad, New Mexico 88220; and Eunice Public Library, 1003 Avenue N, Eunice, New Mexico 88231. The NMED Carlsbad Field Office also served as a document repository for purposes related to the public hearing for this matter since the Field Office reopened to the public on August 7, 2021 [NMED Ex. 3 at 13:16-20; 9-7-21 Tr. 95:23 to 96:1].
- During the Public Hearing, members of the public were afforded the opportunity to provide verbal comments [9-7-21 Tr. 6:23 to 7:1, 11:18 to 12:16, 132:10-16; 9-8-21 Tr. 5:16-19, 113:3-6].

- 159. Four members of the public provided comment at the hearing [9-8-21 Tr. 5:19 to 11:17, 111:25 to 113:1].
- During the Public Hearing, members of the public were afforded the opportunity to cross-examine witnesses [9-7-21 Tr. 12:16-23, 34:4-7, 79:24 to 80:1; 9-8-21 Tr. 52:10-11, 59:14 to 60:19].
- 161. One member of the public cross-examined witnesses [9-8-21 Tr. 52:11 to 53:14, 109:6 to 110:4].
- 162. The Record was kept open until 5:00 pm MDT on September 10, 2021, for the submission of additional written public comments [9-8-21 Tr. 113:7-11].

## Arguments Offered by Interested Parties in Favor of Denial of the Draft Permit

- 163. CCNS urges the GWQB to add the condition for a DP-831 Information

  Repository on the WIPP website. Pursuant to 20.1.4.400.A.1 NMAC, any person who

  proposes to include a permit condition has the burden to present an affirmative case on
  the challenged condition. DOE did challenge the condition. CCNS provided insufficient
  evidence to meet this burden as outlined in the Introduction above.
- 164. CCNS supports the issuance of the renewal portion of the DP-831 Draft Permit but does not support the modification that refers to Salt Cell 5 and Salt Storage Pond 5 and its related monitoring well:

[N]either Salt Cell 5 nor Salt Pond 5 are intended in the Draft Permit to received salt mined from underground panels as the revised Fact Sheet describes. The real source of this salt, shaft 5—is mentioned nowhere in either fact sheet (or in any of the public notices). The argument was considered but rejected based on the lack of credible evidence to support it. Describing the correct source for the salt in Salt Cell 5 is more than just an academic exercise. The excavation of shaft 5, including excavation of the salt that will be stored in Salt Cell 5, has not yet been approved. If it is not approved, the need, as described in the Draft Permit, for Salt Cell 5, Salt Pond 5 and the monitoring well that monitors these facilities goes away.

However, compelling this argument is at first blush, no Party provided the undersigned Hearing Officer any legal authority to support denial of the Draft Permit Modification on this basis, and no credible evidence was admitted that cast doubt on the veracity of the GWQB's and DOE's witnesses.

- 165. CCNS argued that the public participation process for the DP-831 draft permit renewal and modification were defective. Considering the credible evidence attested to by DOE and GWQB, this argument was considered and rejected.
- 166. SRIC's closing argument urges the undersigned Hearing Officer to recommend that:

Salt Cell 5 and Salt Storage Pond 5 should not be included in DP-831 because DOE mis-represented their purpose and because the new shaft #5 is not permitted under the HWA. An additional condition should be included in the Permit to require a DP-831 Information Repository on DOE WIPP website.

As demonstrated above, these two arguments were considered but ultimately fail as a matter of law and for lack of sufficient credible evidence to establish a prima facie case.

## V. CONCLUSIONS OF LAW

- 1. The Secretary has authority to approve the renewal and modification of DP-831, as set forth in the Draft Permit, pursuant to NMSA 1978 §§ 74-6-1 through 74-6-17 and Title 20, Chapter 6, Part 2 NMAC.
- 2. The process for considering the renewal and modification of the Draft Permit is governed by 20.6.2.3101-3114 NMAC.
- 3. The public process for consideration of the renewal and modification and the Draft Permit complied with all applicable requirements of 20.6.2.3108 NMAC.
- 4. The public was given a reasonable opportunity to present technical and non-technical testimony and to cross-examine each witness presenting testimony, and provide general comment in writing and verbally during the hearing.

- 5. DOE complied with the procedural requirements related to notice and hearing for a groundwater discharge permit renewal and modification request.
- 6. The Application (renewal and modification) included and adequately addressed the information necessary for evaluation of a Discharge Permit. Pursuant to Section 20.6.2.3108 NMAC of the New Mexico Ground and Surface Water Protection Regulations (20.6.2 NMAC), the NMED determined on January 7, 2019, that the application (renewal and modification) was administratively complete [FOF #7].
- 7. Pursuant to Subsection B of 20.6.2.3108 NMAC, DOE fulfilled the Ground Water Discharge Permit public notice requirements. On March 5, 2019, DOE provided the NMED's GWQB an Affidavit of Public Notice Completion pursuant to Subsection D of 20.6.2.3108 NMAC [FOF #5].
- 8. Section 20.6.2.3108 NMAC prescribes the requirements for public notice, review, and participation, with DOE meeting all such requirements. DOE's application was deemed administratively complete on January 7, 2019, and DOE was required to provide notice, in accordance with the requirements of Subsection F of NMAC 20.6.2.3108. Meeting these requirements included DOE providing notice to the general public in the locale of the proposed discharge in a form provided by NMED, within 30 days of GWQB deeming DOE's application administratively complete. To meet this requirement, DOE published a synopsis of the notice in English and in Spanish, in a display ad in the Carlsbad Current Argus [AR 02772-02779] a newspaper of general circulation in the location of the proposed discharge. The NMED, within 30 days of its administrative completeness determination and per Subsection E of 20.6.2.3108 NMAC, is required to post a notice on its website and mail notice to any affected local, state, federal, tribal or

pueblo governmental agency, political subdivisions, ditch associations and land grants. The NMED is also required to mail or e-mail notice to those persons on a general and the WIPP Facility-specific list maintained by the NMED who have requested notice of a discharge permit application. The NMED similarly followed such notice requirements (e.g., [AR 03028-03050; AR 03160-03176]).

- a. In addition to fulfilling the notice requirements associated with its completeness determination described above, the NMED fulfilled the other notice requirements under 20.6.2.3108 NMAC. Among other actions, the NMED issued a Public Notice in English and Spanish on March 8, 2020, making the Draft Permit and Fact Sheet available for public comment and written public hearing requests. The NMED issued the Public Notice for a 45-day comment period ending on April 22, 2020 [AR 03160-03165]. The NMED, in accordance with Subsection J of 20.6.2.3108 NMAC, also provided notice to the WIPP facility-specific mailing list, to various governmental entities, and other interested groups [AR 03493-03499]. Due to concerns associated with the COVID-19 Public Health Emergency, the NMED issued further public notices in October 2020 [AR 03028-03050].
- b. The NMED Secretary issued a Notice of Hearing and Appointment of Hearing Officer Order on April 13, 2021. The NMED followed applicable notice requirements related to the hearing, including issuing a notice of hearing in English and Spanish on July 20, 2021. The NMED posted the notice to its website and the notice contained all information required by Subsection C of 20.1.4.200 NMAC and was issued under said subsection [AR 03448-0367]. On August 7,

- 2021, the Albuquerque Journal, a newspaper of general circulation in New Mexico, and on August 5, 2021, the Carlsbad Current-Argus, a daily newspaper published in the area where the Facility is located, published the Notice of Hearing [AR 03456-03467]. On August 3, 2021, the Notice of Hearing was mailed to the WIPP Facility-specific mailing list, various governmental entities, and other interested groups [AR 03500-03507].
- c. A public hearing was conducted on September 7-8, 2021, pursuant to NMED's Permit Procedures regulations, 20.1.4 NMAC, and the NMED Ground and Surface Water Protection regulations, 20.6.2.3110 NMAC. The GWQB provided Spanish language translation through a simultaneous language translation channel for members of the public to listen and speak in Spanish. Opportunities for public comment and participation were provided throughout the hearing, with DOE also providing access to its facilities for those members of the public wishing to make in-person comments, in accordance with applicable public health guidelines.
- 9. In addition to meeting the regulatory requirements for availability of public documents, there is no precedent for the requirement of an information repository under the GWQA or associated regulations. Although, the use of information repositories under The Resource Conservation and Recovery Act ("RCRA") has a regulatory basis that does not exist in the GWQA or associated regulations. For example, an information repository, required by the hazardous waste regulations, is identified in WIPP Hazardous Waste Facility Permit Part 1, Section 1.14: "[t]he DOEs shall establish and maintain an electronic Information Repository (IR) in accordance with the requirements of 20.4.1.1102 NMAC (incorporating 40 Code of Federal Regulations (CFR) §§124.33(c)

- through (f)) and 20.4.1.900 NMAC (incorporating 40 CFR §270.30(m))." Under RCRA, the determination to require an IR is a fact-specific inquiry that requires the consideration of several factors. There is no analogous regulation or criteria from which to determine the scale and scope of such a repository for a groundwater discharge permit.
- 10. It is also distinguishable from the Los Alamos National Laboratory (LANL) groundwater discharge permit, DP-1793. Most importantly, DP-1793's mandatory electronic posting condition is based on public comments submitted to the NMED GWQB on the draft LANL DP-1793 (March 2, 2015, public comments from Communities for Clean Water to Steve Huddleson, Environmental Scientist, GWQB, NMED, Public Comments and Request for Hearing of the New Mexico Environment Department January 30, 2015, Public Notice 2 for the Los Alamos Laboratory Remediation Project, draft DP-1793). There is no similar legal basis for such a requirement for DP-831. Los Alamos National Laboratory's DP-1793 electronic posting requirements relate primarily to complex LANL workplans, required by DP-1793, with DP-831 not having any such action requirements. Although LANL has never posted electronic documents under the voluntary section of DP-1793, those requirements appear based in a different section of the groundwater quality regulations related to voluntary remediation, 20.6.3 NMAC, with DOE again having no similar issue.
- 11. Public meetings and public comment periods met regulatory requirements.
- 12. The Application for renewal and modification and the Draft Permit are fully compliant with the applicable statutes and regulations.

- a. The NMED issued this groundwater Discharge Permit to DOE pursuant to the New Mexico WQA, NMSA 1978 §§74-6-1 through 74-6-17, and the New Mexico WQCC Ground and Surface Water Protection Regulations, 20.6.2 NMAC [FOF #13].
- b. The NMED's purpose in issuing this Discharge Permit, and in imposing the requirements and conditions specified herein, is to control the discharge of water contaminants from the WIPP in order to protect groundwater and those segments of surface water gaining from groundwater inflow for present and potential future use as domestic and agricultural water supply and other uses, and to protect public health. It is NMED's determination in issuing this Discharge Permit that DOE has met the requirements of Subsection C of 20.6.2.3109 NMAC. DOE is responsible for complying with the terms and conditions of this Discharge Permit pursuant to Section 20.6.2.3104 NMAC; failure may result in an NMED enforcement action(s) (20.6.2.1220 NMAC) [FOF #14].
- 13. The WIPP facility, as a DOE facility, falls under the regulatory processes established by DOE and codified in DOE Orders, directives, notices, and the applicable portions of Title 10 CFR. The changes proposed in the renewal and modification are consistent with DOE responsibility to manage the WIPP facility in a manner that ensures that the mission of the facility is fulfilled while preserving the health and safety of the workers and the public and protecting the environment. (DOE Exhibit 1, pp. 4-5, lines 15-23, 1-21)
- 14. DOE is required to comply with the applicable provisions of the Clean Water Act.

- 15. DOE's characterization of the hydrogeology meets the applicable regulatory requirements and ensures protection of ground water, human health, and the environment
- 16. DOE's characterization of the proposed discharges and management thereof meets the applicable regulatory requirements and ensures protection of ground water, human health, and the environment.
- 17. All testimony and evidence excluded pursuant to the Hearing Officer's Orders on NMED's and DOE's respective motions in limine has no bearing on the approval or denial of the renewal and modification of the Draft Permit.
- 18. The Stipulation and Agreement entered into by the Parties and made a part of the record by the Hearing Officer's Order established that the regulatory requirements had been met with respect to all but one of the permit conditions. The remaining permit condition (Number 33) was addressed during the Hearing to the satisfaction of all parties.
- 19. Any discharges from Salt Cell 5 and Salt Storage Pond 5 would consist of leachate which results from the direct natural infiltration of precipitation through disturbed materials and are exempt from the discharge permit requirement under Subsection H of 20.6.2.3105 NMAC [FoFs #91-94; DOE Exhibit 2, p.6, lines 14-21; DOE Exhibit 3, p.8, lines 4-9]. Alternatively, and without limiting the foregoing, the proposed modification relating to Salt Cell 5 and Salt Storage Pond 5 meet the requirements of Subsection C of 20.6.2.3109 NMAC, which provides that the secretary shall approve the proposed discharge plan, modification, or renewal if those requirements are met [DOE Exhibit 2, pages 7-8; DOE Exhibit 3, pages 9-10].

20. Approval of the draft Discharge Permit will maintain protection of ground water, human health, and the environment [DOE Exhibit 1; DOE Exhibit 2; DOE Exhibit 3].

## RECOMMENDED FINAL ORDER

A recommended Final Order consistent with the recommendations above is attached and incorporated by reference.

Respectfully submitted,

Gregory Chakalian Digitally signed by Gregory Chakalian Date: 2021.11.19 10:07:45 -07'00'

GREGORY ARA CHAKALIAN, Administrative Law Judge, Office of Public Facilitation

## Certificate of Service

I hereby certify that on November 19, 2021, a copy of the Hearing Officer's Report and Recommended Decision was sent to the persons listed below:

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